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The greatest economic
project of the twentieth...

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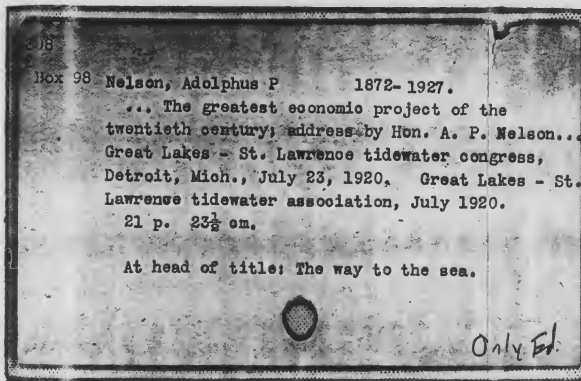
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THE WAY TO THE SEA

THE GREATEST
ECONOMIC PROJECT
OF THE
TWENTIETH CENTURY

Address by
HON. A. P. NELSON
OF WISCONSIN

Great Lakes-St. Lawrence Tidewater Congress
Detroit, Mich., July 23, 1920

Great Lakes-St. Lawrence Tidewater Association, July 1920.

One of the most earnest advocates of the Lakes-to-Ocean route for the economic freedom of the West is Hon. A. P. Nelson, of Wisconsin. His address of March 19, 1920, the first made in the House of Representatives during the present agitation of the measure, attracted wide attention.

Like the address which is submitted herewith, it is a comprehensive outline of the entire proposition and is commended to the study of those who wish to know the outstanding facts on which the main conclusions are based.

ADDRESS OF
HON. A. P. NELSON
OF WISCONSIN.

The Greatest Economic Project
of the Twentieth Century.

Mr. Chairman and Ladies and Gentlemen of the Tidewater Congress, in the time allotted me I desire to impress upon you as well as upon the American Nation that the St. Lawrence Route through the Great Lakes to the Sea, is the greatest economic project of the twentieth century. It is a national and international project. It is the key to the solution of the transportation problem of the great Middle West and Western States, as well as the key to the fuel and power crisis of both the Eastern Seaboard and the Middle West States.

THE PROJECT.

The project is one of national and international importance. It has two important phases—transportation and water power. I desire to discuss the need and importance of both. I wish to give full credit for facts and figures upon which I base my arguments to the Bureau of Foreign and Domestic Commerce, the Geological Survey, C. P. Craig, Executive Director of the Tidewater Association, and the Army Engineers. The project proposed is a development of the international water route from the Great Lakes through the St. Lawrence to the sea, jointly with the Dominion of Canada, that will accommodate ocean going vessels. I believe, Mr. Chairman, that we are quite agreed that in a material and social sense one of the greatest and most important problems in the economy of our National life today is the problem of adequate transportation at reasonable cost to both producer and consumer. The greatest need of America and of the World today is a larger and more intensive production from the farm, mine and factory, and from the general industries of the essentials and necessities of life; a larger development of all our natural resources especially of all water powers to conserve our coal and of all our water ways, to facilitate our acute transportation situation. The world is pleading for food and for the necessities of life. This need shall and must be met. America must and will do her share in supplying it. Our railroads, our inland waterways and our highways are the arteries through which must flow our ever increasing production and expanding traffic. They are the highways of the future prosperity, happiness and contentment of our people. The railway arteries of our nation are today congested to a point of real serious national concern. A broad, constructive and comprehensive national plan, taking in our whole program of the transportation facilities of railways, waterways and highways, and motortruck routes, must, at once, be put into action and operation by Congress and our commercial interests to the

end that we shall have a coherent, coordinated, economic union of our entire transportation facilities, enabling the industrial East, the agricultural South and the agricultural, mining and industrial West to be tied together by a perfected machinery of distribution for their products, that will give each region its best markets and highest incentive for more intensive and increased production.

Our network of railways which have been in a large degree the foundation for our wonderful national growth and economic advance are as vital to our united and growing country as the arteries are to the human body; but if the demands of easy circulation have come to exceed the capacity of the arteries, the economic health of our great country may well be protected by adding to our Railway systems, by a comprehensive plan of coordination and co-operation, every waterway, every highway, and every motor truck route that will serve this end. Therefore I am persuaded, that we must, at once, as a nation study this problem in all its inter-relations, and after a proper and competent survey, bring forth a broad, comprehensive and coordinated plan of the whole field of transportation facilities including railways, waterways, highways and motor truck routes to the end that as it now obtains in our most advanced European Nations, so in America, our transportation arteries must become coordinated and co-operative and not, as at present in our country, disconnected, competitive and destructive. The plan should be sufficiently comprehensive and broad to take for its completion a term of years, possibly 15, 25 or 30 years, and based upon the most competent engineering data. It should plan to avoid present cross purposes, and overlapping of construction and to insist on cooperation and coordination in order that for the minimum money we shall get the maximum results.

Every citizen of the United States and Canada who stops to think for a moment must realize that North American commerce is congesting within the present limitations of transportation, and is straining to the breaking point its present traffic arteries. In twenty years the haulage of freight by railroads in the United States has increased from 1893 tons per mile for each person in the nation, to approximately 4000 tons—more than 100 per cent of increase. Railway and terminal facilities have by no means increased in proportion. Hence, the desperate condition prevailing today. The railroads assert that their minimum needs for affording relief are two billions of dollars annually for a series of years. This is probably true, and it means increased freight and passenger tariffs, which are nothing less than increased taxation upon us all. Much less than one-third of one year's railway need will put the Great Lakes-St. Lawrence route in permanent shape to take off a large percentage of the congestion and strain, and to produce more than two million horse-power of electric energy. Do we not owe the duty of such construction not only to those tributary to this waterway but to the country at large? It would seem that the national physician should not delay the application of this special remedy.

STATED AS A NATIONAL NEED BY TRANSPORTATION EXPERTS.

The testimony by agricultural and commercial experts before the International Joint Commission is almost unanimous in the statement that the St. Lawrence route to the sea is a national necessity. It is exceptionally gratifying to note that the States between the Rockies and the Alleghenies are unitedly, intelligently and determinedly behind this great project. Worthy of special comment is the fact that many of the executives of our great railway systems express it as their firm belief that for the growing demand for transportation in this country there is need for other means than railways and that the development of this great St. Lawrence waterway would effect and relieve at a capital cost much less than would be required to equip the railroads to move the same tonnage. It is also agreed that to the roads terminating at the Great Lakes it would be a great relief and economic benefit and that the roads east of the Great Lakes would not be injured in any way by this project, because of the increased wealth of the whole country

which would follow this development, and because already under the pressure upon these eastern railways their terminals have passed the point of economic operation and are seriously facing the law of diminishing returns. The supreme task of America lies in the development of inland waterways and ocean transportation. The heavy freight of our country must be transported by inland waterways. The delay of this development will cost our farmers, producers, manufacturers and laborers in this country hundreds of millions of dollars annually. Indeed, the heart of our great producing nation, the States between the Rockies and the Alleghenies and tributary to this great golden chain of Lakes, will be forced each year for lack of adequate transportation to accept a price for their products diminished by a sum as great or greater than the total capital investment required on the part of the United States for the improvement of the St. Lawrence route. Most competent experts tell us that the capital investment required by the United States to improve the St. Lawrence route to the sea would not be greater than the annual interest charge upon the capital investment required to be put into railroads to perform the same service.

THREE CLASSES OF WATERWAYS.

The three classes of waterways which are desirable and economical to improve at almost any cost are: (a) short canals, with locks and dams, which will cut off thousands of miles in sea distances, as do the Suez and the Panama canals; (b) waterways which by means of locks and dams form short links in long natural waterway courses connecting larger bodies of water to give easy access to ports such as the Soo, the Welland, and the proposed St. Lawrence; and (c) artificial canals or deep channels that give inland cities direct access to the sea like Manchester, Amsterdam, Hamburg, Bremen, Rotterdam, Antwerp, and others without transfer of cargo. In the point of tonnage that will be carried and territory that will be developed no project in the history of the world will approach in its large economic value to the North American Continent and to the World, the development of this route to the ocean through the St. Lawrence.

AGRICULTURAL PROMOTION BY THIS PROJECT.

Agricultural development is more vital to our Nation's life and welfare and to future generations than all other industries combined. It always has been and is today the foundation stone for our entire financial, commercial and social structure and the motive spring for the advancement of our civilization and national life. Hence the intensive development of the rich agricultural area of the great Middle West—the great granary of the world tributary to the Great Lakes is our first and most pressing need. This vital need can be met only by cheaper and more adequate transportation facilities. Wheatless, meatless and heatless days are not necessary in our American life and economy if we will properly utilize our inland waterways and will open the Great Lakes waterway to the Atlantic. The standard rate for wheat shipped from Superior or Duluth to Liverpool was formerly 14 cents per bushel, divided approximately as follows: From Superior or Duluth to Buffalo, 980 miles, including loading into elevator, 2.5 cents; from Buffalo to New York, 450 miles by rail or barge canal, including terminal charges, 6.5 cents; from New York to Liverpool, 3,000 miles, 5 cents. But it is no longer possible for the farmer to ship his grain to Liverpool at this rate. The cost now exceeds 50 cents per bushel, and there is no prospect of a reduction to anything like former rates. The savings by an all-water route amount to one-third of the charges by any other method, indicating a saving of about \$12,000,000 to \$15,000,000 annually, based on pre-war freight rates, and several times as much, based on present rates. These large savings would go into the pockets of the farmers. The St. Lawrence route is open eight months for navigation and it would be open all the year for water power. The eight months of open navigation is sufficient to carry all peak loads and relieve our present congested traffic conditions. More efficient methods

of distribution which in the end increase the net income of our farmers, will make farming more attractive and add to the number who will make agricultural producers in our Nation. Larger production and better and cheaper distribution of our farm products will tend to check the high cost of living and at the same time increase the net income of our farmers, which in turn will produce larger production. Poor transportation facilities will underpay the farmer or producer and overcharge the consumer. The spread between producer and consumer today is too large, and it hits the farmer, the laborer, and the general public alike. Mounting prices and undue profiteering must be stopped if our social unrest and economic chaos are to be adjusted. The large agricultural interests of the Middle West demand the open route to the Atlantic ocean by the St. Lawrence River through the Great Lakes. Mr. Herbert Hoover has said in his exhaustive study of the food and transportation question that "one of the first things an engineer in surveying this problem would advise would be the creation of a waterway all the way from the Great Lakes to the sea by way of the St. Lawrence river. By this arrangement the crops of the Middle West would have direct, expeditious, and economic access to the ocean. An engineer knows that this could be done at a lesser expense than would be involved in increasing our railroad facilities to care adequately for our marketing. Since the prices of this production are made at the other end in world competition, the cheapening of its transmission to the world's markets would go into the pockets of the farmer." The profits of the farmer during the abnormal conditions brought on by the war have been encouraging to our agricultural production, but it is easy to see that short hours and high wages for labor, high cost of machinery and farm equipment, plus inadequate and high cost of transportation will soon make it impossible for the farmer to produce at a sufficient and sustaining profit the large provision necessary for our home and foreign demand. And let me say that what affects the farmer soon affects the entire structure of our economic and social life. The farm is still the foundation stone of our national as well as world wealth. The tilling to its highest efficiency the farms of our Nation becomes a vital reconstructive problem, worthy of our deepest study and concern.

The tide of immigration and migration is west, but the flow of the products of the farm, mine and factory is eastward and across the sea. More than that, our rapidly growing population produces a commerce that flows both east and west and will tax to its utmost our transportation and power facilities. To help us a kind Providence has placed in the very heart of our continent the golden chain of Great Lakes with transportation and power facilities and natural resources far exceeding that of any equal area in all the world. In our vision of the future, we can see in this project the Mediterranean of America, the great artery of commerce, the great storehouse of never-failing hydroelectric energy for our expanding industries. Seventy-five per cent of Canada's wheat production, including nearly all available for export, is from areas naturally tributary to the Lake route. Sixty-five per cent of the wheat production of the United States is from areas likewise within shipping radius of the Lakes route. Combining these areas sixty-five per cent of the wheat production of North America is in the region naturally tributary to the Great Lakes route to the sea. It is stated that the population curve of the United States has been fairly steady since 1850, except for a slight sag during the Civil War decade. Allowing for a similar possible sag in the current ten year period, the population would very likely pass 150,000,000 in about thirty years. The increase in farm acreage, however, has been at a very much lower rate, especially is this true since 1880. The tilled area per capita is lower today than ever before in our history. In part this is accounted for by the increased efficiency in farm machinery and farm labor but the fact still remains that when translated into production the United States has fallen behind relatively in agricultural development. The tendency of the times is from the farm to the cities. In 1880 we are told about 53.7 of our population were on farms whereas today about 70 per cent are in the cities, villages and towns and only 30 per cent on the farms. This

means that 30 per cent of our population must produce the food and living essentials for the other 70 per cent and for our European needs. This condition today should arrest our most serious attention. Farm production must be intensified by larger returns to the farmer and by better physical, mental and social conditions on our farms.

The surplus production of the United States, except cotton and tobacco, is almost wholly within the area tributary to the Great Lakes, roughly speaking, from the Rocky mountains to the Alleghenies, and as far south as Arkansas and Tennessee. This region, in the very heart of the Nation, tributary to the Great Lakes, with but one-third of the Nation's area and population, produces about one-half to seven eighths of the principal staples, excluding cotton and tobacco. It provides our surplus of wheat, meats, and dairy products and leading minerals. It produces 75 per cent of the wheat, 65 per cent of the corn, and 100 per cent of the flax; 85 per cent of the iron; 39 per cent of the copper; 74 per cent of the zinc, and 46 per cent of the lead, and 50 per cent of the potatoes and sugarbeets. It possesses more than 50 per cent of the Nation's cattle, swine, and dairy cows; 60 per cent of the horses, and 72 per cent of the Nation's measured coal reserves. From a study of the best available government statistics it will be observed that 12 of these States produce \$1,138,000,000 worth of slaughterhouse products out of \$1,652,000,000, the total production of the United States. Three States alone produce \$117,000,000 worth of rubber goods out of a national total of \$223,000,000. The automobile industry of this area produces \$540,000,000 of the Nation's total output of \$632,000,000, or 87 per cent. The production of butter, cheese and condensed milk is about two-thirds of the total for the United States. Agricultural implements, \$133,000,000 out of a total of \$164,000,000 of the Nation, comes from this area bordering on the Great Lakes. In the census of manufactures for 1914, the last authentic figures, we find that \$9,000,000,000 out of a national total of about \$24,000,000,000 worth of manufactures, or more than a third—37½ per cent—of America's production came from the cities tributary to the Great Lakes. But the strictures of high transportation costs are making themselves felt. The grain areas of the Northwest are actually falling off in production because of the higher cost of going over to the systems of intensive agriculture with fertilizers on this once virgin land. The cost of intensive production plus the present high freight rates to the open sea will make it impossible for the farmers of this great area to compete with countries of virgin soils and cheap labor, such as Russia and Argentina. It is an economic axiom that the total cost is the cost of production plus the cost of transportation. The farmer receives only that amount which is left from the world's market prices after deducting the cost of transportation, including middleman's profit. Any expedient that will lower the cost of transportation and cut out the rehandling with its large costs, and cut down the percentages of the commissions and profiteers will leave the farmer a greater reward for his labor, and the consumer a more equitable standard of living. Free access to the sea for the western and middle-western farmers would give them a much larger portion of the prices paid in the world's market for their products. The effect on the manufacturer would be to lower his ultimate cost in the world's market. By lowering prices he would increase his sales and his production, which in most industries results in lower cost of production in his own factory. Thus a great benefit would result in the reduction of the high cost of living to the American consumer and the American producer, including the farmer, the manufacturer, the laborer, and the employer.

Tributary to the Great Lakes, to be enhanced by better markets and better transportation facilities, lies some of the most fertile land in the Union of which over 50 per cent is still undeveloped awaiting the stimulus which its greatest project of the twentieth century would engender. My own State, Wisconsin, the greatest dairy state in the Union, has in the northern section bordering on Lake Superior some of the finest dairy and farming lands in the world, all of which would blossom forth in full fruition by the stimulus of this

great project, which would make every lake port a sea port, tripling its commerce and doubling all its farm values. The same is true of many of the other states such as Michigan and Minnesota. No rapid and substantial increase can be expected upon the present congested transportation base. Only communication by water between the Great Lakes and the Atlantic seaboard or foreign markets will enable this much desired result to be accomplished. What is true of the States bordering the Great Lakes is equally true of other Northwestern States and the range for improvement widens as one goes further into the interior. For example, in the Joint Commission's hearings at Des Moines, Iowa, Dean Curtis and Professor Nourse, of Ames, pointed out that the Iowa Farmer has to meet the potential and active competition of the producers in Argentina and Australia. Argentine corn can be laid down on our Atlantic seaboard cheaper than Iowa corn. In foreign markets Argentina and Australia have a great advantage. The Argentine farmer is never more than 250 miles from the sea. Iowa as well as any other Middle West State will be placed upon a parity when these States have a free access to the sea through the Great Lakes via St. Lawrence. The Northern sections of Wisconsin, Minnesota and Michigan with their millions of acres of cut over pine and hardwood land can be made the dairymen's paradise. Surpassing any like region in the world in climate, water and grasses, its dairy products are beyond calculations when the Golden Chain of Lakes are transformed into the American Mediterranean by the St. Lawrence route to the sea. The dairy development of the States bordering on and tributary to the Great Lakes staggers the wildest imagination. Listen to this statement by Dean Russell concerning Wisconsin: "There are 400,000 more cows in Wisconsin now than last year, a leadership of some 350,000 more cows than the nearest competitor, New York State. The production statistics supplied by George Weigle, state dairy commissioner, show that 311,848,807 pounds of cheese or more than half the nation's production was made in Wisconsin. This would supply a cargo for 32 five-thousand-ton boats. The cargo would be valued at \$91,541,500. The butter production of 105,943,665 pounds is valued at \$57,235,843. Condensed milk worth \$66,340,000 and weighing 510,000,000 pounds was made in the 53 factories. Ice cream must not be forgotten—30,000,000 pounds or more than 4,250,000 gallons was produced. Some 250,000,000 pounds of milk valued at more than \$7,000,000 is shipped out of the state for manufacture or consumption. The grand total of dairy products amounts to the tremendous total of \$277,500,000."

In this connection it is to be observed that the dairy and other products that now move by refrigerator cars can be carried more cheaply and in much better condition by water than by rail. The absorption of heat by box cars is terrific. The refrigerator compartments in boats are much better, with the result that cold storage products that go down the Lakes by boat can reach Buffalo at exactly the same chill as when they left the cooler. When they travel by box cars the temperature is often 50 or 55 degrees by the time they reach their destination at the eastern markets which starts their deterioration. Can you measure the benefits to the Northwestern producer in this one item alone?

The great and all important fact before our Nation today is that the development of the great Northwest is just begun and, with our present transportation facilities broken down, the Great Lakes to Ocean route project under discussion is an imperative necessity as a means of relief from a terrible emergency. It is a project of continental and age-long significance. The older sections of the Middle West States need fertilizers. Nitrates can be supplied by live stock and clover culture, but phosphates need to be replaced. The easiest way to obtain phosphates will be from the South Atlantic coast. Boats loaded with ore for Chesapeake and Atlantic ports can return with fertilizer on a comparatively low carrying charge, just as coal is now brought up the Lakes at about one-third of the ore rate going down the Lakes. Authorities tell us 250,000 tons of phosphate is needed each year in Michigan alone as a fertilizer. The same demand, no doubt, would obtain in the other Middle West States. The counties where phosphate

fertilizer has been used extensively show an increase in crop yields of 25 per cent. Just try to calculate what this item alone would mean to our agricultural promotion.

THE STEEL INDUSTRY.

Eighty per cent of the ore consumed in the United States comes from the Great Lakes district; eighty per cent of the pig iron manufactured in the United States is made in the Great Lakes territory, including the Pittsburgh and Ohio districts served by the Great Lakes. High water mark in pig ore production was a little under 40,000,000 tons of which 75 to 80 per cent was in the Great Lakes States for the two years 1916-17. Against a native production of not quite 75,000,000 tons of ore about 1,300,000 tons was imported. The tiron of not quite 75,000,000 tons of ore about 1,300,000 tons was imported. The export of ore and steel, however, except as manufactured products, was inconsiderable. Consumption of steel products on the seaboard is between 12,000,000 and 15,000,000 tons. Therefore, ten to twelve million tons crosses the Alleghenies from the Lake district to the Atlantic. A large proportion of that consumption is necessarily within a distance of the Atlantic seaboard which would invite all water movement from Western furnaces with local back haul. As for the manufacturers of steel products at Cleveland, Detroit, Gary, Milwaukee, Chicago, Superior, Duluth and other lake ports, a large saving is possible on coastwise business, and on export business a saving equal to the entire rail tariff is possible when the way to the Atlantic is opened through the St. Lawrence. On structural steel and semi-finished products the saving on export business will be almost equal to the total rail haul, as ocean rates are indifferent to a distance of a thousand miles more or less between ports, as is evidenced by the fact that the rate from Northern Europe to Calcutta or Bombay is usually the same, although there is a difference of two thousand miles in the voyage. The steel industry of the country, one of the real barometers of our commercial life and economic advance, warned the Interstate Commerce Commission at its hearing on railroad car service on July 10, 1920, that a shutdown of steel mills is threatened because of inability to move their products. J. P. Townsend, spokesman for the steel manufacturers, said "Steel mills are blocked with products, many of them closed, and unless immediate relief is afforded, others will be similarly affected." He further stated that 28,300 cars would be required at once to move the 1,500,000 tons of steel products piled up and awaiting shipment. We say, aid the railway and terminal congestion, by opening up the Great Lakes route and all inland waterways.

OUR RAILROAD FACILITIES NOW INADEQUATE. INLAND WATERWAYS A NATIONAL NECESSITY.

The railroads are not now, and have not for years, been able to cope with our growing transportation demands, especially for grain and farm products in season. It is also quite evident that our railroads cannot increase the transportation facilities without enormous and almost prohibitive cost in carrying charges. This project will be, as Herbert Hoover said, a "real benefit to our railroads in giving them a better average load without the cost of maintaining the surplus equipment and personnel necessary to manage the peak load during the fall months." We should not have competition between the railroads and our inland waterways, but sympathetic cooperation. Indeed, we must supplant destructive competition between railways and waterways by a program of constructive cooperation. There is plenty of room for growth and expansion of railways in legitimate territory void of inland waterways. The whole country, the producer and the consumer, should have the benefit of the full and complete development of both railways and waterways through cooperative harmony. We all desire to see our great and wonderful railroad systems expand and meet the growing transportation need and no one desires to see our magnificent railway system, the most efficient in the world, hurt, and it is the honest belief of the twenty-six states of the Tidewater and the

Mississippi Valley Associations that the St. Lawrence improvement will be helpful and not hurtful to our American Railway systems. Listen to what C. H. Markham, President of the Illinois Central Railroad says: "There is no comparison between the cost of moving tonnage on the Great Lakes and on any other known waterway. Competition with other nations, in the world trade, is going to make it necessary for the people of this Nation to take advantage of every opportunity to increase efficiency in all things affecting producing and manufacturing costs. Since transportation lies at the very foundation of commerce, what we ought to do is to make use of whatever instrumentalities of transportation are the most efficient and economical. If we have an interior waterway on which tonnage can be handled more cheaply than by rail, the two forms of transportation should be so correlated as to permit tonnage moving by the route which can handle it the most efficiently and economically."

This broad and comprehensive statement of President Markham of the Illinois Central leads me to quote here a statement concerning inland waterways in France by Brigadier General Frank T. Hines, U. S. A., when he says: "France, as everyone knows, has a most superlative system of inland waterways which function side by side with her railroads. During the war when France was the stamping ground for the armies of all nationalities, she would have been helpless had she been obliged to depend upon her railroads alone for transportation. When our armies arrived in France we found not only the French but also the British intensely utilizing inland waterways. The English at that time were operating through their inland water service about 800 boats handling approximately 250,000 tons of freight per month. We, following their example, built up an inland water transport service as an adjunct to the transportation corps. Through that organization we were able to utilize the interior waterways of France to an invaluable degree. Despite the stringent lack of barges and other floating equipment, we were able to assemble a fleet of 294 craft, upon which we handled, so far as the available records indicate, close to 400,000 tons of various materials of war. The military value of releasing the already congested and over-burdened railroads to this extent cannot be estimated. This new policy is therefore not the result of propaganda or favoritism toward waterways. It has a much more substantial basis. Commerce has a greater, more urgent need for waterways today than ever before. The present rail situation is sufficient evidence of this. The railroad today views the waterway not as an undesirable competitor, but as a very necessary ally in the solution of the enormous national transportation problems which we are now facing."

Our keenest competitor in world commerce, both foreign and domestic, before the world war, was Germany and, if we study and analyze critically to find out what made this industrial supremacy possible, we will find that one of the chief reasons, was her cheap and efficient inland water transportation facilities offered to her producers and manufacturers. We are told by Congressman Newton of Missouri, that in 1875 the inland waterways of Germany "carried 13,000,000 tons of freight. In 1913 her inland waterways carried 109,000,000 tons of freight and during that time the development of her commerce surpassed that of any nation in the world." In 1908 the tonnage handled by rail at Hamburg amounted to 5,236,723 tons, while during the same year the tonnage handled by waterways at that city amounted to 8,605,500 tons. Since 1885, the tonnage handled by water at Berlin has been practically equal to the tonnage handled by rail. In many of her inland cities as large an amount as ninety per cent of heavy products such as coal, sand, gravel, building material heavy machinery, etc., is transported by water. Why not do this in our own great country? What a relief that would be to our overburdened and broken down railroad transportation today. Plenty of cars would at once be available for our perishable and high-priced products of the farm and factory. Coal famines due to car shortage would be unknown and earth's golden harvests now held for months and months in congested elevators and terminals would move freely to destined markets and at lower rates to the producer and consumer. The proper administration of

our Esch-Cummins Railroad Transportation Act will by proper co-ordination of all railroads and all inland waterways bring about a better and larger day in the transportation systems of our great and growing Nation.

Today the railroads are making insistent demands for such aid as will enable them to make needed improvements and extensions. We are agreed that such aid should be given for needed improvements as will enable the railways to function to their highest capacity. The program for such improvements will take at least ten years for its accomplishment. Certainly no one dares say that we can overhaul our equipment and terminals and meet needed expansions in less time than that even to meet adequately our present demands. Our best railway experts say that our traffic demands are ten years ahead of our transportation facilities. That is to say, ten years from now the railways by normal growth will be able only to take care of today's business. For more than ten years, therefore, our great country must forego growth and expansion unless supplied by our great inland waterway arteries of which the St. Lawrence today is the master key. Within five years from the time the Congress of the United States and the Dominion of Canada gives the authority, the St. Lawrence can relieve the situation and carry on its broad highway the nation's surplus products to the Atlantic and world ports.

The capacity of this route is without limit. The Great Lakes Highway, with its annual burden today of 100,000,000 tons and constantly growing, is only a gauge to the limitless expansion of this lakes to ocean route. In five or six years we can have this mighty artery working out the only solution possible to our complex commercial, industrial and social problems facing us today. With this relief, such measures as the railroads may be able to take for their improvement ought to be adequate. Without this relief, the railroads are engaged in a hopeless task. With this highway opened to the sea the Great West can continue to expand; without it, the West and Middle West must wait ten years before its transportation facilities can catch up with its present needs.

Mr. J. L. Record, of the Minneapolis Steel and Machinery Company has said, "If we could only see daylight at the end of five years. We cannot now see any way out. The situation is hopeless except by a radical re-adjustment of the transportation system." Every magazine, yea, every publication of importance today has something to say along the line of the absolute hopelessness of the present acute transportation situation. When the railroads have done all that they can possibly do, with all the encouragement that can possibly be given them, they will not have met our immediate urgent demand and need. You might as well try to excavate the Panama Canal with hand shovels and wheel-barrows, as to try to carry the growing and expanding commerce of the United States by railroad transport alone.

The center of the packing industry was established and maintained on the west side of Chicago with a tier of packing houses established and maintained on the Missouri river. Outposts are now found in Montana, Colorado and Oklahoma. The industry has been pushed back farther and farther but the market place is practically where it was a hundred years ago. We now have an inland industry 1000—1500—2000 miles from its base. The Lakes to Ocean route, which brings the western country a thousand miles nearer its markets, will link the packing industry once more with its market, bringing the base within easy reach. When I say packing house industry, I mean the live stock industry, as it is thru the packing houses that live stock production is translated into the ultimate market. Now what is true of the live stock industry is equally true of other forms of agricultural production. Agriculture is getting more and more divorced from its base thru inadequate transportation facilities. We say, unlock all our inland waterways and make them relieve our urgent and pressing need by proper correlation and co-ordination.

PROJECT—NATIONAL AND INTERNATIONAL IN SCOPE.

That the consideration of this project is national and international in scope and most opportune in time can scarcely be denied when one is reminded that this great project has been thoroughly discussed by our most prominent

engineers and engineering bodies and always admitted as a most feasible water route and a development much to be desired as a relief to our overburdened transportation facilities, and as a needed hydroelectric power in our seaboard industries. The Great Lakes and St. Lawrence Tidewater Association is a voluntary association of 14 member States, including Wisconsin, Minnesota, Michigan, Illinois, Indiana, Ohio, Iowa, North Dakota, South Dakota, Idaho, Montana, Wyoming, Colorado and Nebraska. The first three of these states have aided the movement through State commissions created by their respective legislatures. These States, together with the States of the Mississippi Valley Association, are today in a voluntary cooperative effort attempting to impress this Nation and Congress with the urgent need of adequate transportation facilities at reduced rates, to be provided by the proper development of our inland waterways. And I wish to impress upon Congress and this Nation today the fact that these great Western States between the Rockies and the Alleghenies, constituting the very heart of the United States, are today banded together in this voluntary association because of a common national need and a common national interest in one of the greatest and most far-reaching enterprises of the century in affording this vast territory of industry and production a proper outlet to the Atlantic seaboard by way of the Great Lakes.

PRESENT CONGESTION OF RAILROADS AND TERMINALS

Proper development of inland waterways will do away with the freight blockades and terminal congestions which now almost paralyze the traffic from the great interior to the seaboard ports. It will eliminate much of the transfers of cargoes and congested terminals which now often equal in cost the entire line haul. Listen to this remarkable statement made by G. W. Mooney, secretary-treasurer of the Seaboard Steel & Manganese Co., of New York: "When a car of freight starts from Chicago to New York City it has, in point of time and cost, accomplished just half of its journey when it reaches Trenton, N. J.," due to the overburdened railroad traffic and congested terminals in New York harbor. Thousands of freight cars, loaded with grain and flour, have stood on sidetracks in Eastern cities days and weeks and often months without being moved, due to congested terminals. A high authority has said that it is well within the realm of probability that, if we have the average crop or better for 1920 and an average production in our industries in the area of the great Western States, these States will lose for lack of adequate transportation facilities a sum equal to the sum it will cost the United States for her one-half of the cost of the improvement of the St. Lawrence project. These facts should arouse our Nation to her obligation and duty. Our Nation must address herself most vigorously to the development of our inland waterways. Congress must realize that real economy lies in a sane and proper improvement of our inland waterways and that ample appropriations for their development is in the line of true economy and national prosperity. We must have added routes at once. The cheapest to construct, the largest in carrying capacity, and the lowest in freight cost is by the Great Lakes and St. Lawrence River to the sea. The neck to the entrance of New York harbor is full to its limit. It can hold no more. Embargoes have occurred even in normal times, and we all recall the almost complete embargoes on traffic in 1918 and 1919. Let the American Mediterranean, nature's highway of our Nation, assist our growing commerce and needed production.

WESTERN CITIES AND LAKE PORTS, SUCH AS THE TWIN CITIES AND TWIN PORTS AND CHICAGO, HANDICAPPED.

Julius H. Barnes, of the United States Grain Corporation, says: "From the time the grain commences to move the Western railroads will always have an inadequate car supply. Now, if the cars with export grain ended their trip at the Western Lake ports, they need not leave owners' lines. The normal balance of car supply would be preserved and all business would be relieved by

more equal and just flow of car service." It is a well-known fact that the Minneapolis grain and flour market has been tremendously handicapped the past season for want of car service. It has had to carry on hand for months in storage the surplus supply ready for shipment and needed in the eastern and world markets. The St. Lawrence water route offers the only sure relief for this almost intolerable annual handicap to our great Western States in transporting their surplus of golden harvests to the world markets. Recent reports from the Federal Reserve Bank of Minneapolis, show that the car shortage is acute in the Northwest territory, and that commercial banks are carrying paper that should have been liquidated months ago. Sixty thousand cars are needed at once to carry last season's grain crops now stored in country elevators, in the Twin Cities and western terminals. The collapse of the transportation facilities of the country, particularly of the railroads and the larger eastern ports, has brought these great Western States to a position of feeling strangled because they have no direct outlet to the sea. The extent of this congestion may be indicated by the comparison of the number of tons of freight in the three principal railroad districts of the United States. In the western area, a little less than 600,000,000 tons; in the southern area, about 300,000,000 tons; while in the eastern area 1,132,000,000 tons of freight were carried in 1918. The railroads and their terminals are no longer equal to this load, and the cost in delays and actual outlay of expense has become so great and acute that the Western States now demand a free access to the sea.

INDUSTRIAL DECENTRALIZATION NEEDED.

Our country should become more and more industrially decentralized, because of the tremendous distances of our transportation hauls. The raw material should be manufactured into the finished products, as far as practicable, within its own geographical zone or circle of distribution. In other words, we should not go east with the raw materials and then ship them back as finished products to the west. Neither should we ship west the raw materials and then ship them back east as finished products. We must reduce carrying charges by a sane policy of conservation in manufacture and distribution of raw materials into finished products.

INCREASED PRODUCTION AND THE RAILROAD CRISIS.

We talk much these days about increased production, but let me ask you how can you increase production without increasing transportation? The great James J. Hill, the empire builder of the West, said 10 years ago, concerning transportation, that "the crisis has already arrived." He also said that we would need to add annually \$1,000,000,000 for railroad expansion. Railway experts tell us today that we must have \$2,000,000,000 annually as our minimum need. These figures are staggering. The freight and passenger rates necessary to sustain such huge investments will tend to strangle real production. Cheaper transportation of heavy freights must be found. It is found at our very door. Open the locks of the great American Mediterranean. Let us have the proper vision and the needed courage to improve and utilize the natural highway offered as the only solution. Unless we properly improve our inland waterways we will fail to function as a great and growing Nation and fail to meet the ever-increasing demand for cheaper transportation for our constantly increasing production and expanding commerce. Listen to these amazing figures: In 1900 our railroads in the United States carried 1,863 tons of freight 1 mile for every person in the Nation. By leaps and bounds these figures increased until in 1910 the total was 2,773 tons and in 1918 about 3,871 tons. In 1916 we hauled 340,000,000 ton-miles of freight and in 1917 we hauled 400,000,000 ton-miles of freight.

Each year our traffic will increase these enormous figures. President Howard Elliott, one of the great experts on railroad matters, gives as our railroad needs in rolling-stock equipment for the next five or six years the almost staggering figures of 600,000 new freight cars, 20,000 new locomotives and 20,000 new passenger cars. These totals translated into cost figures would

read as follows: Six hundred thousand freight cars, at an average cost of \$2,500 each, \$1,500,000,000; 20,000 locomotives, at about \$60,000 each, \$1,200,000,000; and 20,000 passenger cars, at about \$15,000 each, \$300,000,000; or a grand total of \$3,000,000,000 for rolling-stock equipment alone for the next five or six years. This says nothing about steel terminals, betterments, and the various other railway improvements and extensions absolutely essential, so that the statement that \$6,000,000,000 as the necessary reason for railway development is easily within the realms of truth and reason. Compare these stupendous figures with the cost of the St. Lawrence project, which is estimated to cost about \$120,000,000 on a pre-war basis and possibly \$250,000,000 on our present basis, one-half to be contributed by courageous and enterprising Canada.

COAL CONSERVATION.

Competent engineering data tell us that the total horsepower development of the United States is about 40,000,000 horsepower. Of this total 30,000,000 horsepower is of steam, 8,000,000 of it is hydro, and 2,000,000 of it is gas. As horsepower by steam means consumption of immense quantities of coal, it soon becomes apparent that as a Nation we should now address ourselves most vigorously to the great problem of the utilization of our water powers wherever possible. Electricity for our industries and factories, our street railways, and even in many places our railroads, is a vital economic factor in our program of constructive conservation. America must economize in her coal resources if we are to be fair and square with our posterity and if we are to give a proper amount of export to other needy nations. We are told that the consumption of bituminous coal in America alone has grown to 580,000,000 tons in the last year. The coal shortage, by reason of strikes and collapse of our railway transportation in the last two years during peak seasons, has emphasized most forcibly the need of utilizing all possible water power and all possible waterways in our country. The St. Lawrence River, with its millions of horsepower, would mean much in this program of conservation. Indeed, our great task in the coming years is in discovering the "vital economies in the generation of heat, light, and motive power." We must learn how to hitch up America's coal and America's water power." In so doing we shall attain our highest efficiency and service and the largest economy in our natural resources. When we realize that coal is about one-third of the total tonnage carried by the railroads, we are forced to see the absolute need in reducing this load by water routes. The utilization by the eastern seaboard of the United States' one-half, amounting to 882,000 horsepower to be supplied by the St. Lawrence River, would mean a saving of millions of tons of coal every year. The annual income rental of this immense horsepower on the American side alone would be about \$12,000,000, which is equivalent to a return of 20 per cent on the investment. This huge return is astounding, and the amazing thing is that this great waterpower has not already been developed and utilized. It is to be hoped that we will hesitate no longer to join Canada in its development. Particularly is this true when we are told by the most competent engineers that the project is perfectly feasible and that the return on the water power alone, leaving out all the advantages of transportation, will more than pay for the entire investment.

THE MEDITERRANEAN AND BLACK SEA COMMERCE IS A PRECEDENT FOR OCEAN-LAKE NAVIGATION.

In the discussion of this topic I desire to give due credit for facts and figures to Dr. R. S. MacElwhee, Assistant Director of the Bureau of Foreign and Domestic Commerce, author of "Ports and Terminal Facilities," a book every person interested in this project should read. The opening of the St. Lawrence River will make of the Great Lakes a second Mediterranean and Black Sea system or a second Baltic system. By taking New York, Gibraltar, London, and Montreal as corners of an ocean quadrilateral, it will be found

that the distances between New York and London, New York and Gibraltar, and Montreal and Gibraltar are about the same, but that Montreal and London are about 500 miles closer together than New York and London.

Commerce coming out of the Great Lakes area, or the Mediterranean and the Black Sea area, or out of the Baltic area, are all within almost equal distances, except the leg of the quadrilateral between Montreal and London; that is, from Montreal to Odessa or from New York to Odessa is about the same distance. On the other hand, the distance from Montreal to Superior or Duluth is only about half the distance from Gibraltar to Odessa. It is difficult to note the true distances on the usual map on the Mercator's projection. These relations are clearer on an interrupted homographic projection or on a polar hemisphere. The territories served by Odessa and by Superior or Duluth are essentially similar. These ports serve an enormous wheat producing area that is capable of carrying many times its present population and affording, through the development of the prosperity and purchasing power of its people, a tremendous market for manufactured products. Before Russia collapsed—that is, before the Great War—London and other English sea-faring centers found a very profitable trade in shipping from London through the Strait of Gibraltar to Odessa. Similar conditions will exist in shipping from New York past Montreal to Superior or Duluth or Fort William or Port Arthur. The distance from Liverpool to Gibraltar is only a few miles less than from New York to Montreal. Distances from London to Helsingfors, Finland, and other ports on the Baltic are quite similar to the distances from Montreal to the Head of the Lakes. By passing through about 51 miles of the Kiel Canal the conditions of navigation are similar. If it has been found profitable for centuries to send ships from the North Sea and north Atlantic coast of Europe into the Black Sea or into the Baltic, is it not reasonable to suppose that ocean-going ships will go into the ports of the Great Lakes?

The present controlling depth of channels and harbors throughout the Great Lakes is 21 feet. Is there enough ocean tonnage in the world, drawing less than 21 feet, to encourage the belief that the number of ocean-going vessels on the Great Lakes will be considerable? The present type of ocean vessels of 21-foot draft is 4,500 to 5,000 deadweight tons carrying capacity and a length of 335 to 350 feet, with a speed of 10 knots. It will be recognized that this is the handy small ship that was built in great quantities by the Emergency Fleet Corporation during the War. Statistics show that the average deep-load draft of these vessels is 22 feet, or only 2 feet more than at present permissible when loaded entirely full. From 1904 to 1908 there were 1,062 vessels built with an average draft of 21 feet. From 1909 to 1915 there were 1,180 vessels with an average draft of 21½ feet. From 1914 to 1918 there were 1,345 vessels with an average draft of 22 feet. However, average draft means nothing to us when we are limited by a maximum of 21 feet. By taking a schedule of vessels of 22½ feet draft, we find that the average tonnage is from three to four thousand, and that of this type 1,112 vessels have been built. Whereas only 155 vessels have been built of more than 10,000 tons, 3,574 vessels have been built of from 2,000 to 6,000 deadweight tons, and most of these are vessels with full load drafts of 21 to 23 feet. Many cargoes fill a vessel with less than full draft. It can be concluded, therefore, that most of the freight tonnage of the world could enter the Great Lakes at once without deepening channels more than they are today. The three or four dams of the St. Lawrence will probably be like the locks of the Welland, and the approaching channels thereto, are designed for an immediate depth of 26 feet, and ultimately 30 feet. Therefore, practically all of the ocean cargo tonnage drawing up to 25 feet could enter Lake Ontario and Lake Erie to within 35 miles of Detroit, without further dredging. An examination of the ports of Oswego, Buffalo, Erie, Rochester, and Cleveland will indicate that only very short distances need to be dredged a few feet deeper than at present, in order to accommodate at all of these ports vessels drawing 26 feet, which means most of the world's cargo tonnage.

The question arises, will the cost of operating these expensive ocean-going vessels be more or less than the cost of operating the cheap Lake boats and canal barges, plus the cost of transfers at Buffalo and New York? This gives occasion to some interesting figuring. A 3,000 to 6,000 ton ocean vessel will cost, according to Shipping Board figures, about \$1,000 to \$2,000 a day for operation, interest and depreciation. Based on the northwest European and Great Britain trade, the actual sailing distance equal to the distance to the port of New York will bring the vessel to Erie or Cleveland on the Great Lakes, allowing for 18 to 24 hours lost time in passing through the 45 or 60 miles of restricted channels and the locks. For every day further than this we must add \$1,000 to \$2,000 operation, as compared with \$600 for the lake vessel. To the lake vessel's expense account must be added \$1 a ton for transfer at Buffalo, plus the time of the vessel at Buffalo in transferring the freight to the canal boat, including the time of the canal boat during transfer, plus the time it takes the canal boat to get to New York. If there are no other charges involved, it would seem that the ocean freighter could get a considerable distance into the Great Lakes before the margin of advantage of carrying the shipment without breaking bulk over a 500-mile shorter ocean route would be overcome by the higher operating expense of the ocean carrier compared with the less expensive lake and canal carriers. Not cheap sailing, but in port expenses—not port charges and fees—but in the expense of doing business through congested Atlantic ports that have broken down under the strain of the enormous increase in American commerce is the place to look for possible savings. When it is estimated that a carload of freight from Chicago has only completed half of its travel to New York in point of time and cost after it has passed Trenton, N. J., and when it is borne in mind that from Jersey City to the vessel or warehouse in or about Manhattan or for performing this delivery amounting from \$30 to \$60 per car or \$1.50 to \$3.00 per ton. And when it is borne in mind that if the shipper is not able to route his consignment from the interior directly alongside the steamer but land it somewhere and cart it to a warehouse and from the warehouse again again to the steamer, the charges that accrue will amount to from \$10 to \$15 a ton; and further, when it is realized that, due to the congestion and delays and numerous strikes at the port, a vessel may be held there on the average of from 10 to 15 days at an expense of from \$4,000 to \$5,000 a day to do a job of discharging and loading that should not require more than 5 days at a small, or well-equipped terminal, it will be seen that the cost of operation for a few hundred miles of comparatively open sailing through the Great Lakes to a port where the vessel will receive dispatch without congestion, the matter of this increasing expense of navigation is very small, indeed, compared to the great saving to the steamship company, the shipper, and the railroad company. The nature and amount of savings seldom occur to the mind of the public. These will almost remove the economic Chinese wall that is preventing the Middle West and great Western States from realizing their full development.

THE WATER POWER AVAILABLE FROM THE CANALIZED ST. LAWRENCE IS DEMANDED AT ONCE FOR POWER BY NEW YORK AND NEW ENGLAND INDUSTRIAL CENTERS.

Lieutenant Colonel Keller of the United States Army says: "In the St. Lawrence 4,000,000 horse power is waiting development. It is a crime every day it is allowed to run to waste." The total theoretical horsepower available in the international portion of the river, based on a flow of 241,000 second-feet and a fall of 92 feet, is about 2,520,000 horsepower. Assuming that but 70 per cent of this amount could be made available on account of the inefficiency of water wheels and generating equipment, there would be 882,000 horsepower available to Canada and the United States, respectively. The St. Lawrence River Power Co., is already utilizing a flow from the river in this section

equivalent to about 95,000 horsepower. The amount of power in the Canadian portion of the river below St. Regis, utilizing the mean annual flow and the total fall in this portion and 70 per cent efficiency in water wheels and other equipment is 2,490,000 horsepower. The total amount of power available in the St. Lawrence River from Lake Ontario to ocean navigation is, therefore, about 4,254,000 horsepower, of which 882,000 belongs to the United States and 3,372,000 to Canada. The question naturally arises, Will there be sufficient demand for this tremendous amount of power if it is made available? The following table based on census figures from 1899 to 1917, shows the total installed capacity of prime movers in manufacturing plants, central stations, and power plants of electric railways in the New England States and New York State:

Year	Horsepower
1900	12,270,000
1905	16,400,000
1910	21,200,000
1915	24,200,000
1920	27,200,000
1925 (Estimated)	30,100,000

Note that the values in this table do not include the power of locomotives, power plants of hotels and apartment houses, other small plants of similar nature, and power plants in State and Federal institutions. These figures indicate that at the present rate of increase there will be needed in New England and New York about 3,000,000 more horsepower in 1925 than at present and that there would be a demand for all the available power of the St. Lawrence long before the power could be made available if construction should start immediately. Undoubtedly if the 4,250,000 horsepower in the St. Lawrence were available at the present time it would be very quickly utilized, for, owing to the difficulty in securing coal, a dependable and steady source of power such as the St. Lawrence would speedily replace fuel-generated power not only in the United States but also in Canada. No consideration has been given to the demand for power in Canada, which, like the United States, is suffering from a power shortage, and it would be willing to export to the United States only the portion of the power of the St. Lawrence for which it has no market. The Province of Quebec, however, is rich in water power. The chief of the hydraulic service of Quebec estimates that there is 5,000,000 horsepower available in the rivers of the Province, not including the territory above the fiftieth degree of latitude. It may prove to be more profitable for Canada to export the St. Lawrence River power and utilize the water power of Quebec for its own use. New England at present is having great difficulty in securing coal for its industrial and domestic use, and any increase in the number of prime movers utilizing coal for fuel only serves to make the situation more acute. A point will soon be reached, if it has not already arrived, when the industries in New England will move to fields where fuel can be easily and surely obtained or to fields supplied with reliable and dependable hydroelectric power. Canada is rich in water power, and Quebec has many fine power sites on streams whose flow can be regulated. The flow of the St. Maurice is controlled by a reservoir having a capacity of 160,000,000 cubic feet, twice the capacity of the Assuan Reservoir in Egypt. By means of this reservoir, the flow of St. Maurice River at Shawinigan, is kept at 12,000 second-feet, about twice the natural minimum flow of the stream. With such desirable water powers practically just across the boundary line from New England, it may not be long before there is an exodus of New England factories to a source of power not affected by strikes of miners or by congestion of railroad traffic. The development of the water power of the St. Lawrence will in a large measure relieve the power situation in New York and New England. Sooner or later the immense

power of the St. Lawrence must be developed. So great a natural resource cannot much longer be neglected, just because it happens to lie on a national boundary line. If there are complications, business diplomacy must overcome them. As there is a prospective preponderance of benefits, engineering skill must adjust them. Coal is getting each year more costly to bring to the districts removed from the mines. Hydroelectric power is every year becoming more of an economic necessity. The people of the United States and Canada can not afford not to use the St. Lawrence power. If the United States refuses to cooperate with Canada in developing navigation on the St. Lawrence, Canada will not long hesitate in developing the immense power resources of the St. Lawrence, as the power shortage in Canada is more acute than it is in the United States, for Canada has not the immense coal resources which we enjoy on this side of the line. The power necessities and the navigation interests appear to be of equal importance, and they may well be developed together, for in this instance water power and navigation dovetail together perfectly.

BENEFITS OF THE PROJECT NATION AND WORLD-WIDE.

The Great West and Middle West; the Great Lakes Region and the wonderful and fertile Mississippi Valley desires, and must have full economic freedom. It is entitled to the best highway to the markets of the Nation and of the world for its rich and growing products of the farm, factory and mine, and when the neck of the entrance of New York harbor from the inland way is clogged and blockaded beyond all possible relief, let us make it a coastwise road from the St. Lawrence into its matchless harbor by its front and unrestricted open door. Let us relieve the Eastern railroads of billions of expenditure to take care of peak loads and mounting deficits the rest of the year. Superior, Duluth, Ashland, Washburn, Racine, Milwaukee, Chicago, Toledo, Detroit, Cleveland, Buffalo, and Erie have just as much right to have ocean steamers load and unload at their ports as do New York and Montreal. Eighty per cent of the entire ocean fleet today have draft less than the lake channels can accommodate. It is, therefore, clear that sufficient ocean vessels can at once be secured to carry the ocean commerce into the Great Lakes ports. The West must have traffic relief and the Lakes to Ocean route is the only way that will give it. New York will always continue to have the advantage. She will always grow. She will always be the commanding port of the continent. This commanding commercial position no project can or will take away from her, nor would we care to do so. But let me say right here, New York, in place of blockading this noble project, should wholeheartedly support it, remembering that she owes to the great West and its development her own wonderful growth and place. The Great West has helped New York; New York should aid the Great West in return in a project of nation-wide mutual interest. Only in a spirit of co-operation of the development of our entire nation in all its commercial possibilities and latent powers can lie our real American commercial supremacy over the other nations of the world. Our nation as a whole, and the great Middle West in particular, should not be sacrificed to the selfish and narrow provincialism of any one port or any one State or terminal. Such a narrow and contracted provincial vision will not mean the highest development of our Nation's supremacy in commerce and industry. New York, when she sees this project in its broadest aspect, will, I believe, enthusiastically support it. The opposition, I believe, is very limited, and the rank and file of the people of the great State of New York will overwhelmingly support this project when they realize the tremendous advantages to be derived for New York. She will win in hydroelectric power and teeming industrial life many times more than she could ever lose by the through cargoes on the St. Lawrence River, much of which will still continue to land in the New York port by this route.

Anyone in New York or in the eastern seaports inclined to oppose this

most important economic project should read and clearly visualize the significant statement made by the broadminded, farsighted, and constructive statesman, the Hon. Franklin K. Lane, in his annual report of 1919, when he states that "over 70 per cent of the available water power is west of the Mississippi, whereas over 70 per cent of the total horsepower now installed in prime movers is east of that river. Therefore, unless the East is to lose its industrial supremacy it must press, and press hard, for the development of all water power possibilities." New York and the Atlantic seaboard should, therefore, because of self-interest and for their future growth and welfare, join most heartily with the great Western States in a mutual program of giving to the West an outlet to the sea and to themselves their needed water power development. The continued neglect of improving the Great Lakes waterway to the sea is nothing short of a national economic crime. If within 10 years the major portion of the available horsepower could be utilized at the present prices of coal, the total cost of the entire project would be saved in two years. The project of removing the St. Lawrence barrier to give the Great Lakes access to the sea is not merely an expenditure to encourage navigation, but also an investment in hydroelectric power that promises to pay large dividends. Consider the importance of this hydroelectric development over a radius of 260 miles. From the 20 or 30 miles of power developments along the international boundary the million horsepower would be distributed in an arc extending from Rochester down to Geneva, just north of Ithaca and south of Albany, taking in the great central area of New York State and the Champlain canal system, which grew rich and prosperous along the old Erie Canal.

The Engineering News Record of New York says very significantly that "the opposers are those New Yorkers who fear for the prestige of the country's principal port and foresee the abandonment of the costly barge canal. New York, a year-round port, fed by the great railroad systems of the Nation, blessed by a magnificent basin of deep and still water at its very warehouse doors, has nothing to fear from the St. Lawrence waterway. There also need be no fear of the abandonment of the barge canal following the canalization of the St. Lawrence." It has been said that canals cannot run sidings into industrial plants to take and leave freight, but this situation can be met by placing the factories on the banks of the canal. With ocean navigation provided for on the Great Lakes, each Lake port becomes a seaport, thus opening up the world's markets with cheap water transportation to the manufacturers of the United States. The banks of the barge canal will eventually be lined with factories drawing their power from transmission lines reaching from Niagara Falls on the west, from the St. Lawrence on the north, from the Hudson on the east, and from the water-powers of Maine farther to the east. The products of these factories will be shipped on barges through the canal west to ocean steamers at Buffalo on Lake Erie, north to Oswego on Lake Ontario, east and north through Lake Champlain to the canalized St. Lawrence, and east and south to New York. The future of the canal, its great usefulness, and its greatest return to the State that spent so much energy and treasure in building it, will come from the development along the new location of new and thriving and prosperous industry. With freight rates increasing and the cost of coal mounting, the State can offer to new industries both cheap water transportation and cheap electric power from the St. Lawrence development to locate along the banks of the new canal. Could there ever be a more auspicious combination? Through traffic brings little revenue to the State, but the industries that would grow up with cheap transportation and cheap power would give the State a great return. The Great West has helped New York; New York should aid the Great West in return in a project of a nation-wide mutual interest. Only in a spirit of co-operation of the development of our entire Nation in all its commercial possibilities and latent powers can lie our real American commercial supremacy over the other nations of the world. New England and

New York with their immense supply of skilled and trained labor is the natural and logical manufacturing center of the United States. The improvement of navigation which brings the market of the world to the factory doors and at the same time provides power for the operation of these same factories will be favored and demanded by those who are broad-minded and who have the country's success and prosperity as a whole, at heart. Only those who are governed by sectional animosity and cannot see beyond their own narrow sphere of interests will oppose such improvement. Making the Great Lakes navigable for ocean steamers and developing the great water power of the St. Lawrence are improvements so fundamentally necessary for the industrial growth and prosperity of the United States that they will not and cannot long be delayed by those who base their opposition solely on the ground that a small section of the United States may possibly be harmed by such improvements.

Brooks Adams, in his address of 1916 before the Bunker Hill Monument Association, made his appeal for social coherence of our American democracy, a coherence that can come most surely through common economic welfare. Washington was first to foresee the possibility of cohesion of West and East through his project of the Chesapeake Canal. Engineer and statesman that he was, his ideas of patriotism sought expression in a practical measure—the waterway “as a bond of union and a stimulant to coherent thought.” Mr. Adams calls attention to the fact that we owe to Washington, by Jay's treaty, the possession of the western posts which made possible the other pioneer route between West and East, the Erie Canal, a competitor of his own canal. Would Washington, with his vision of the need of giving the West an outlet to the sea, hesitate to indorse and to promote this later development of a waterway, even though it might seem to parallel the Chesapeake & Ohio and Erie Canals? Every bond of economic union is needed to make America coherent. The industrial East, the agricultural South and the agricultural and mining West need to be tied together by the perfected machinery of distribution that gives to each region its best market and makes interdependence conscious and thus an incentive to social and political integrity and solidarity.

When the 14 great states of the Tidewater Association, together with the 12 other great states joined with them in the Mississippi Valley Association, making a total of 26 States or more than half of our Union, plead at the bar of National economic justice and urge the need for better distribution of the products of their farms, factories and mines, it should be the concern of the other States to unite in promoting whatever measure will accomplish that end. The St. Lawrence waterway may be international in its geographic setting, but in its economic bearing it is truly national. President Washington would have seen in it not simply an aid to a section of the country, but a further contribution to the common welfare of the Nation.

My most earnest plea to Congress is, therefore, that we shall stand for a square deal to the great Middle West. Remove the barriers. Open the locks. Create the American Mediterranean. Increase production. Enhance America's commerce. Above all, may we ever stand a united people for one all-persuasive American ideal for a national mind, a national will, and a national conscience, ever defending law, justice, liberty, home, intelligence, and religion, the enduring pillars of our Nation's life and America's progress. I plead today alike for the farmer and the laborer; the manufacturer and the business man. In our great reconstruction period, Capital must become more generous, Labor more faithful. We must utilize all our matchless resources as a Nation in order to maintain our economic and social supremacy and leadership among the nations of the world. We must carry optimistic brows and courageous hearts. The future path of glory to our Nation lies in our people having a larger vision to see and the Rooseveltian courage to fight for a square deal to all. There is no permanent ground for the mere reactionary or destructionist; America has no place for Anarchy, I. W. W.'ism

and Bolshevism. United in thought and action we must always and everywhere lower the flag of anarchy and forever and everywhere raise the Stars and Stripes; the glorious flag of hope and promise. We are living today in times of great unrest and social and economic discontent, yet pregnant with great opportunities for consecrated wealth and loyal labor to work out a destiny mighty with promise for peace and happiness. Change the awful tide for selfish power for the higher and nobler ambition for heroic service, and you will make at once humanity more helpful and the world more free. The old foundations of error, inequality, fixed wrong, stereotyped injustice, selfish ambitions, grovelling aims, and material aggrandizement are today in a fluid mass melted in the fire of the world's awful conflict. The hopes and aspirations of mankind today are ready to be led by the spirit of freedom, justice, and patriotism to nobler resolves and higher consecrations, ready to become conscious instruments of social good, universal happiness, and nation-wide and world-wide freedom of body, mind and soul. The remedy, in my judgment, is plain. Capital must become more generous and labor must become more faithful. Both must clasp hands across the chasm that now divides them in a spirit of real cooperation and with a heart and mind actuated by the principles of the Son of Man to the end that they will serve their Nation and their generation in the highest and truest sense. Thus only can we bring about a larger production and a proper conservation of our national resources, including money and industry. Selfishness, greed, and profiteering must cease. The great game of grabbing and holding without conscience and regard for our fellow men must stop. The india-rubber conscience produced as an aftermath of the great World War in the ranks of both labor and capital, rich and poor, high and low, must be changed to the principles enunciated by Christ in the Sermon on the Mount or we shall suffer defeat and chaos. All the forces of the Government and the people must be united in a spirit of constructive cooperation and deep filial concern if we shall hope to make our Nation socially happy and economically contented. The real constructive program needed by our Nation and the world today is to just get back to first principles of civilization and Christianity and build upon the eternal Rock of Ages to the end that farm, mine and factory shall produce its utmost and be conserved and distributed for the welfare and betterment of mankind. The future growth and glory of our Nation still rest on what Roosevelt called the “square deal to all.” We must still build on the primal rights of mankind as a unit and not upon the rights of single individuals or even groups or classes. These ideas are American in their truest and highest sense and make a government “of the people, for the people, and by the people.” This idea of universal liberty and universal well-being is the only hope that will fulfill the promises of the immortal Declaration of Independence and will verify the vision of our immortal founders. It is this idea, truly American, that today must elevate the intellectual spirit of our Nation and deepen the channels of our economic, moral and spiritual life.

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